WHAT IS CLAIMED IS:

1. A heat exchanger for cooling exhaust gas of an internal-combustion engine, comprising:

a plurality of rectangular tubes for guiding exhaust gas;

a plurality of lugs arranged in pairs in said rectangular tubes diagonally to a flow direction of the exhaust gas;

latticed tube bottoms in which ends of said rectangular tubes are arranged such that said rectangular tubes form a bundle;

a sheet metal jacket arranged around said bundle and attached to said tube bottoms, said sheet metal jacket being provided with a coolant inlet and a coolant outlet to allow a liquid coolant to flow around said rectangular tubes in said sheet metal jacket; and

flange plates attached to ends of said sheet metal jacket and configured for attachment to an exhaust pipe, each said flange plate defining a central opening which communicates said rectangular tubes with the exhaust pipe.

2. A heat exchanger according to Claim 1, wherein the ends of the rectangular tubes are welded to the tube bottoms, the sheet metal jacket is welded to the tube bottoms, and the flange plates are welded to the ends of the sheet metal jacket.

3. A heat exchanger according to Claim 1, wherein the rectangular tubes are each formed of two tube halves which are welded together.

4. A heat exchanger according to Claim 3, wherein said lugs are provided in at least one of the tube halves.

5. A heat exchanger according to Claim 4, wherein the lugs are welded onto the tube halves.

6. A heat exchanger according to Claim 4, wherein the lugs are molded by means of deep drawing and pressing out of the material of the tube halves.

7. A heat exchanger according to Claim 1, wherein the lugs are components of inserts arranged in the rectangular tubes.

8. A heat exchanger according to Claim 3, wherein the lugs are components of inserts arranged in the rectangular tubes.

9. A heat exchanger according to Claim 1, wherein the rectangular tubes are provided with spacing elements facing respective adjacent rectangular tubes.

10. A heat exchanger according to Claim 1, wherein the flange plates are provided with threaded sleeves in

areas which are essentially mutually diametrically opposite.

11. A heat exchanger according to Claim 1, wherein the coolant inlet is arranged proximate the flange plate which is in the front in the flow direction of the exhaust gas and the coolant outlet is arranged proximate the flange plate which is in the rear in the flow direction of the exhaust gas.

12. A heat exchanger according to Claim 11, wherein the coolant inlet and the coolant outlet are arranged on opposite sides of the sheet metal jacket.

13. A heat exchanger according to Claim 11, wherein the coolant inlet and the coolant outlet each contain a connection tube which is aligned in parallel to the rectangular tubes and which is connected by way of a lateral opening with an opening of the sheet metal jacket.

14. A heat exchanger according to Claim 12, wherein the coolant inlet and the coolant outlet each contain a connection tube which is aligned in parallel to the rectangular tubes and which is connected by way of a lateral opening with an opening of the sheet metal jacket.

15. A heat exchanger according to Claim 13, wherein a water chamber is formed between each flange plate and a

respective of the holding webs in the area of the openings of the connection tubes and of the sheet metal jacket.

16. A heat exchanger according to Claim 15, wherein the connection tubes are arranged as an extension of one threaded sleeve respectively which is closed on its rearward end, and wherein said water chamber is formed between each threaded sleeve and a respective of the connection tubes by a cover plate extending from the flange plate to the holding web.

17. A heat exchanger according to Claim 1, wherein the sheet metal jacket comprises two preformed sheet metal shells which fittingly engage the tube bottoms by way of joint connections.

18. A heat exchanger according to Claim 1, wherein the flange plates fittingly engage the sheet metal jacket by way of joint connections.

19. A heat exchanger according to Claim 1, wherein the threaded sleeves fittingly engage the flange plates by way of joint connections.

20. A heat exchanger for cooling exhaust gas of an internal-combustion engine, comprising:

a plurality of tubes for guiding exhaust gas;

first and second latticed tube bottoms, each tube bottom defining a plurality of openings corresponding to an outer periphery of respective of said tubes, first and second axial ends of each of said tubes being arranged in respective of said openings in said first and second tube bottoms such that said tube bottoms support said tubes substantially parallel to one another and spaced-apart from one another in a bundle;

a sheet metal jacket concentrically surrounding said bundle and attached to said tube bottoms, said sheet metal jacket and said tube bottoms defining a chamber, said sheet metal jacket being provided with a coolant inlet and a coolant outlet to allow a liquid coolant to enter said chamber, flow around an exterior surface of said tubes in said chamber, and exit said chamber; and

flange plates attached to ends of said sheet metal jacket and configured for attachment to an exhaust pipe, each said flange plate defining an opening which communicates an interior of said tubes with an interior of said exhaust pipe.

~~21.~~ A heat exchanger according to Claim 20, further comprising a plurality of lugs ~~arranged~~ in pairs in said tubes diagonally to a flow direction of the exhaust gas~~;~~

22. A method of manufacturing a heat exchanger for cooling exhaust gas of an internal-combustion engine, said method comprising the steps of:

providing a plurality of rectangular tubes for guiding exhaust gas;

attaching a plurality of lugs to said rectangular tubes diagonally to a flow direction of the exhaust gas, said lugs being arranged in pairs;

attaching ends of said rectangular tubes to said latticed tube bottoms such that said rectangular tubes form a bundle;

attaching a sheet metal jacket to said tube bottoms and around said bundle;

providing said sheet metal jacket with a coolant inlet and a coolant outlet to allow a liquid coolant to flow around said rectangular tubes in said sheet metal jacket; and

attaching flange plates to ends of said sheet metal jacket, said flange plates being configured for attachment to an exhaust pipe, each said flange plate defining a central opening which communicates said rectangular tubes with the exhaust pipe.

Todd Ct